

Wireless 802.11n USB Adapter

Model # ZEW2547



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Chapter 1 Introduction

1.1 Welcome

ZEW2547- 802.11n Nano USB Adapter delivers an incredible speed to your desktop/laptop PC without running wires. It complies with the IEEE 802.11n standard, making it backward compatible with 802.11b/g networks for assured compatibility. Advanced 64/128-bit WEP, WPA/WPA2 encryption is supported to provide secure access for your data. Once you're connected, you can stay in touch with your email, access to the internet and send large files across the network at greater distances than ever before.

1.2 Product Feature

- Complies with IEEE 802.11g and IEEE 802.11b standards
- Compliant with USB 2.0 Standard
- Provides up to 150Mbps transmission rate and up to 300 meters transmission distance
- Auto-detects and changes the network transmission rate
- Provides two work modes: Infrastructure and Ad-Hoc
- Supports Soft AP to establish your wireless LAN networking
- supports PS3, PSP, Wii and Nintendo DS connecting with Internet and XLink Kai to enjoy on-line gaming
- Supports 64/128-bit WEP, WPA, WPA2 encryption methods and 802.1x security authentication standard
- Supports Wireless Roaming function
- WPS (Wi-Fi Protected Setup) simplify the security setup and management of Wi-Fi networks.
- Supports WMM for Multimedia Applications with Quality of Service in Wi-Fi® Networks
- Supports Windows 2000 / XP / Vista / 7, Macintosh, and Linux

1.3 Contents of Package

- One ZEW2547
- One Installation CD w/User Manual
- One Quick Installation Guide

Contact your local authorized reseller or the store purchased from for any items damaged and/or missing.

1.4 Before You Begin

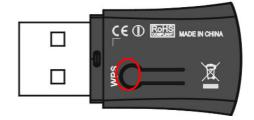
You must have the following:

- A laptop computer/desktop PC with an available USB 2.0 slot
- Minimum 300MHz processor and 32MB memory
- Windows 2000, XP, Vista, 7; Macintosh; Linux
- A CD-ROM Drive
- USB controller properly installed and working in the computer
- 802.11n or 802.11b/g Access Point (for infrastructure Mode) or another 802.11n or 802.11b/g wireless adapter (for Ad-Hoc; Peer-to-Peer networking mode.)

1.5 Know Your ZEW2547







Location	Item	Descript	ion
FRONT	LED Indicator	ON	ZEW2547 is switched on and correctly powered
	Flashing	ZEW2547 is transmitting or receiving data	
REAR	WPS Button	Press this	button for 1 second to start WPS function

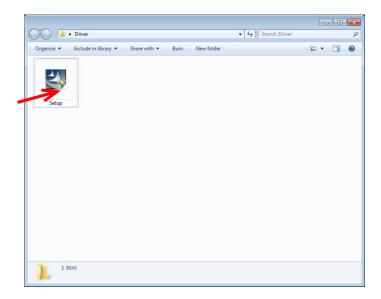
Chapter 2 Installation

NOTE:

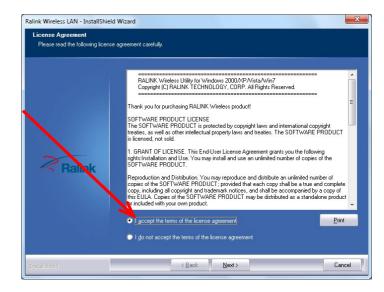
For future driver upgrading, please visit our website at www.zonetusa.com

2.1 Windows 7

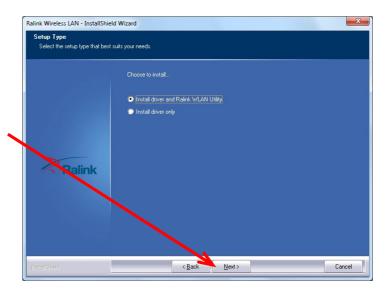
- Power on your PC, let the operating system boot up completely, and log in as needed.
- Insert Installation CD to your CD-ROM drive. Browse CD and double-click **Setup.exe** in Driver folder to execute it. The wizard will run and install all necessary files to your computer automatically.



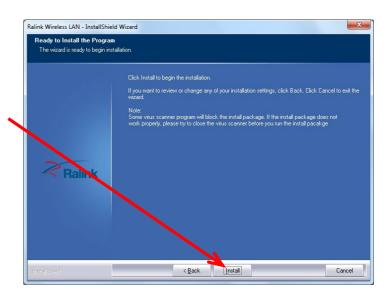
3. Click **Next** to accept the Agreement. Or click **Cancel** to cancel the installation.



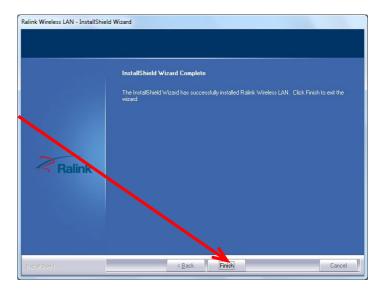
4 Select Install driver and Ralink WLAN Utility or Install driver only then click Next.



5. Click *Install* to start installation. Or click *Cancel* to cancel the installation.



6. Click **Finish** to complete the software installation.



7. Then insert ZEW2547 into a USB slot of your computer



or



You will see a tray icon K appear in your system tray at the bottom of the screen after the software and hardware installation completed successfully.

2.2 Windows 2000/XP/Vista

NOTE:

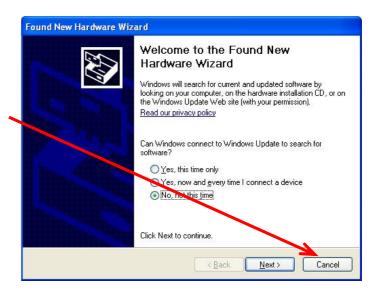
Snap-shot screens of the following installation procedure are based on Windows XP. Installation procedures will be similar for other windows operating systems.

- Power on your PC, let the operating system boot up completely, and log in as needed.
- 2. Attach the external antenna to ZEW2547's antenna port. Then insert ZEW2547 into a USB slot of your computer

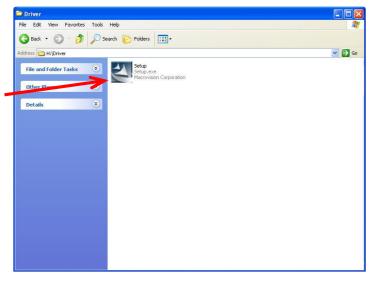


or

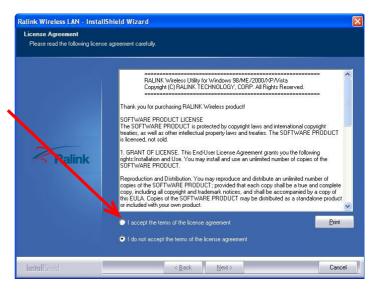
3. Select *Cancel* when *Found New Hardware* window appears.



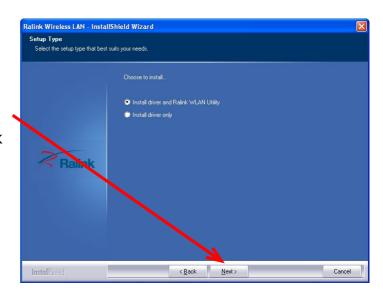
4. Insert Installation CD to your CD-ROM drive. Browse CD and double-click **Setup.exe** in Driver folder to execute it. The wizard will run and install all necessary files to your computer automatically.



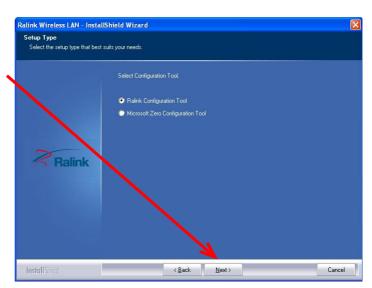
Click **Next** to accept the Agreement. Or click **Cancel** to cancel the installation.



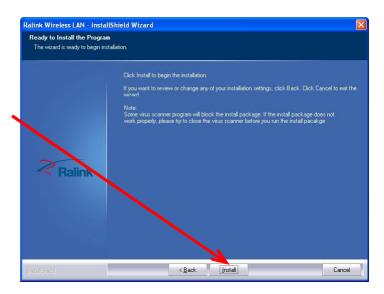
5 Select Install driver and Ralink WLAN Utility or Install driver only then click Next.



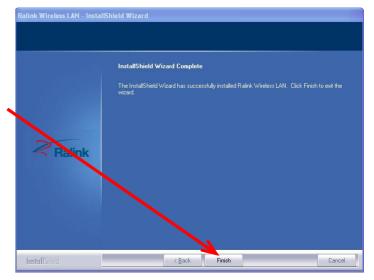
- 7 Select Ralink Configuration
 Tool or Microsoft Zero
 Configuration Tool then click
 Next.
 - a. It's recommended to select **Ralink Configuration Tool**, which provides fully access to all function of ZEW2547.
 - If you prefer to use the wireless configuration tool provided by Windows XP or Vista, please select Microsoft Zero Configuration Tool.



8. Click *Install* to start installation. Or click *Cancel* to cancel the installation.



9. Click *Finish* to complete the software installation.



You will see a tray icon R appear in your system tray at the bottom of the screen after the software and hardware installation completed successfully.

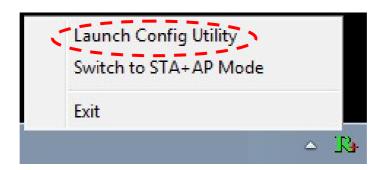
Chapter 3 Configuration

3.1 Station Mode

Station Mode is the default access mode for ZEW2547. In this mode, ZEW2547 serves as a client to receive the wireless signals to access the Internet.



Double-click the tray icon to launch the configuration utility. Or right click the tray icon and select *Launch Config Utility*.



When main window pop out, select button from the menu bar for more settings.

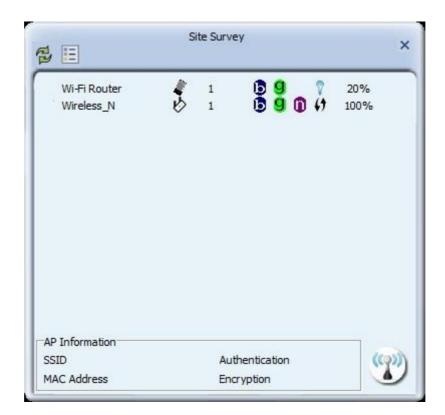


3.1.1 Site Survey

Site Survey will let you know information of all surrounding wireless networks from the last scan.



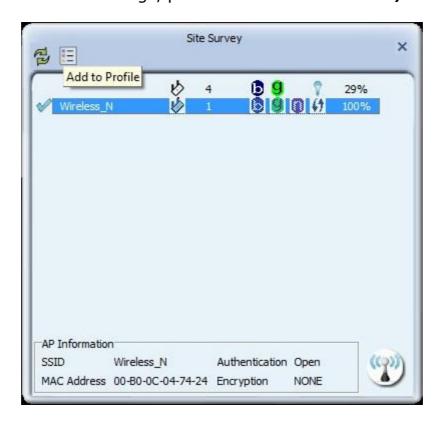
Click Site Survey button from menu bar, below window will pop out.



- Rescan: to update and refresh surrounding wireless networks
- EProfile: to jump to profile list window
- Connect: select one wireless network and click this button to connect it

Note:

When highlight the connected wireless network, click button to add/edit profile. For more detail settings, please refer to **3.1.2.1** Add/Edit Profile.



3.1.2 Profile

Profile can keep your favorite wireless setting among your home, office, and other public hotspot. You may save multiple profiles and activate the one at your preference.

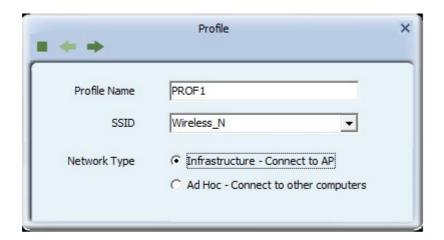


Click Profile button from menu bar, below window will pop out.



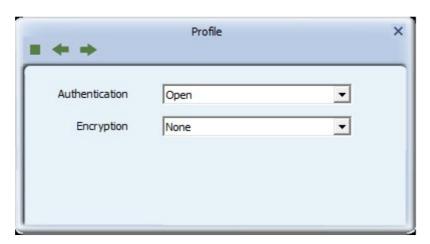
- Add: to create a new profile
- Delete: to delete an existing profile
- **Edit:** to edit/modify/change parameter of an existing profile
- **Import:** import the dedicated profile
- **Export:** save the selected profile as backup
- **Madd WPS Profile:** to configure WPS settings
- ****DActivate:** to make an existing profile become active and to connect

3.1.2.1 Add/Edit Profile



- **Profile Name:** Enter a name for the profile edited.
- **SSID:** It's the name of your wireless network.
- Network Type:
 - **a. Infrastructure** A wireless Router and/or Access Point is required.
 - **b. Ad-hoc** Peer-to-Peer network, no base station required.
- Next: Click this button to continue.
- Back: Click this button to go back to previous step.
- Cancel: Click this button to close the window.

Click Next to configure encryption settings.



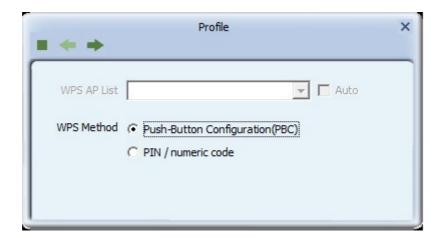
- Authentication: Open, Shared, WPA, WPA-PSK, WPA2, WPA2-PSK, 802.1x, CCKM, WAPI-PSK, WAPI-CA
- Encryption: None, WEP, TKIP, AES, SMS4

3.1.2.2 Add WPS Profile

Add WPS Profile supports the configuration setup using PIN configuration method or PBC configuration method.

WPS(Wi-Fi Protected Setup) simplify the security setup and management of Wi-Fi networks.

 Push-Button Configuration(PBC): Default setting, push buttons to complete auto-check and connections between ZEW2547 and other wireless device



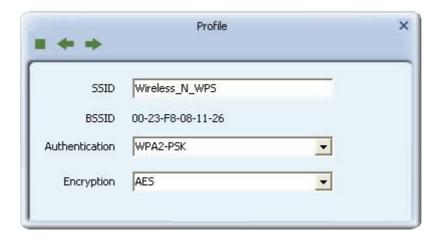
- **PIN/numeric code:** Enter 8 digit numbers Pin code to automatically connect ZEW2547 with wireless devices around.
 - 1. Select WPS AP from drop-down menu or check Auto checkbox to find WPS AP automatically.



2. Select one Config mode for connecting the WPS wireless network.



- Enrollee: As a client device. Click *Renew* button to update pin code.
- **Registrar:** As a host AP. Enter 8 digit numbers Pin code and click **WPS Profile** button for detail configuration.
- 3. Click **WPS Profile** button to configure below settings.



- **SSID:** Enter a name of SSID for WPS wireless network
- **BSSID:** It is a 48bit identity used to identify a particular BSS (Basic Service Set) within an area. In Infrastructure BSS networks, the BSSID is the MAC address of the AP.
- Authentication: Select from drop-down menu.
- **Encryption:** Select from drop-down menu.

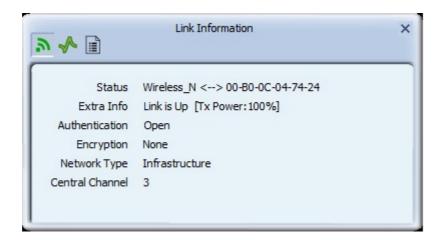
3.1.3 Link Information

Link Information window shows detail information about the current connection.

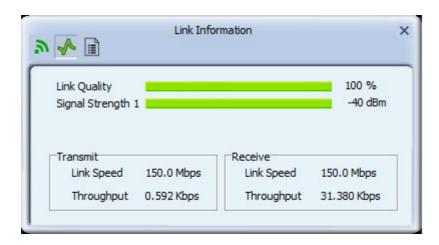


Click Link Information button from menu bar, below window will pop out.

• Link Status



Throughput



• **Statistics**

Statistics displays the detail counter information based on 802.11 MIB counters. This page translates that MIB counters into a format easier for user to understand.



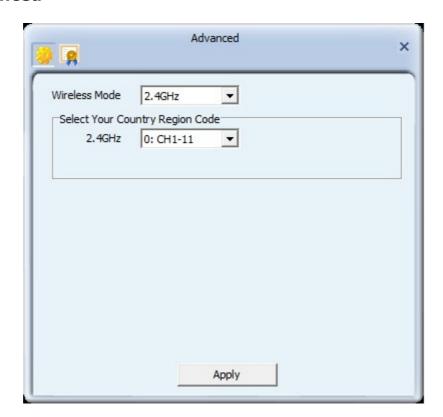
3.1.4 Advanced

The Advanced page shows Advance function of UI

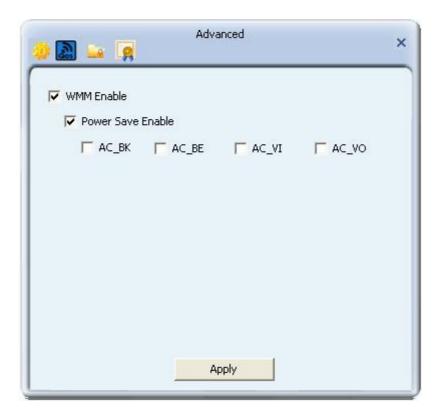


Click Advanced button from menu bar, below window will pop out.

Advanced



• **WMM**



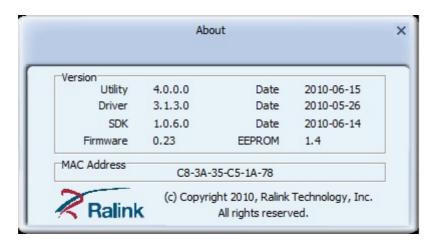
- WMM Enable: Enable Wi-Fi Multi-Media
- **Power Save Enable:** Enable WMM Power Save and select which ACs you want to enable to complete the setting.

3.1.5 About

The About page shows the information of ZEW2547 and software version.

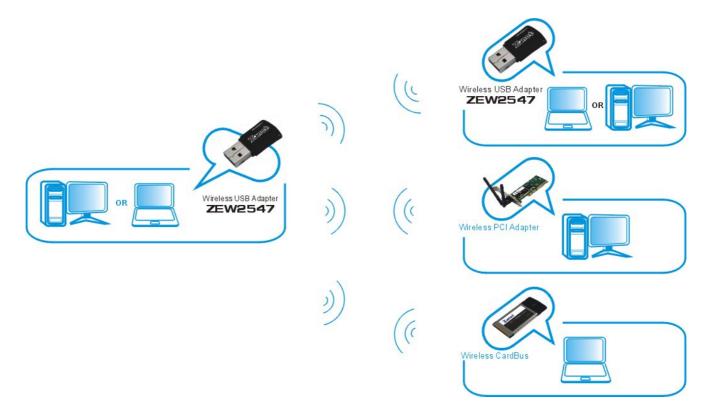


Click About button from menu bar, below window will pop out.



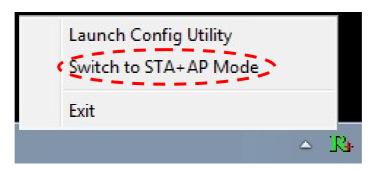
3.2 AP Mode

ZEW2547 also can serve as an access point to transmit wireless signals and create wireless network, allowing other wireless clients to access the network.



3.2.1 Windows 7

1. Right-click the tray icon R and select **Switch to STA+AP Mode.**



2. Enter a name of SSID for Soft AP and $8{\sim}63$ ASCII characters for WPA2 Pre-Shared Key.



Note: ASCII characters include any numbers/letters and characters.

3. ZEW2547 will automatically create a virtual adapter in your computer.



4. AP button will be added to menu bar of main window.



3.2.1.1 Configuration

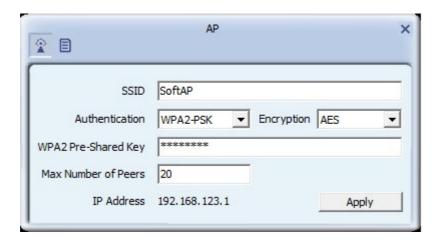
AP window can make basic configuration and shows MAC table.



Click AP button from menu bar, below window will pop out.

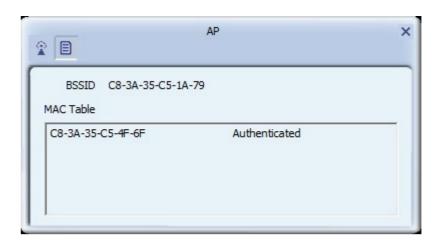
AP Configuration

In AP Configuration page, you can make some basic configurations, such as wireless network name, and security setting.



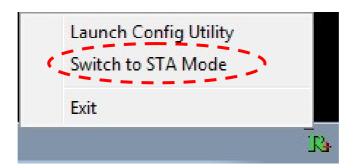
MAC Table

MAC Table page shows the information of the wireless devices accessed to this soft AP.



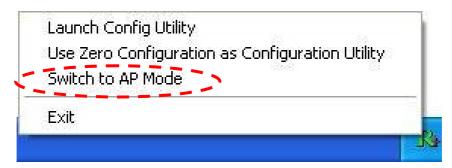
3.2.1.2 Switch to Working Station mode

In STA+AP mode, right-click the icon in the system tray and choose **Switch to STA Mode**, then ZEW2547 is switching to working station mode with an interface of working station.



3.2.2 Windows 2000/XP/Vista

Right-click the tray icon **\mathbb{N}** and select **Switch to AP Mode.**



When main window pop out, select button from the menu bar for more settings.

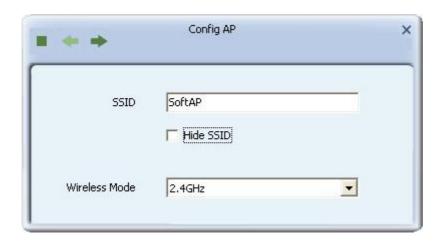


3.2.2.1 Config AP



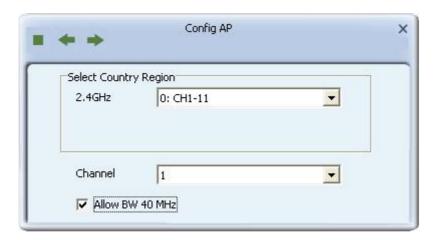
Click Config AP button from menu bar, below window will pop out.

1.



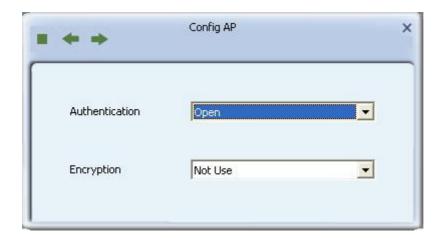
• **SSID:** Enter a name of SSID for Soft AP.

2.



• **Channel:** Select the channel used for wireless communication from drop-down menu. Available channel numbers are 1 to 11 for USA, 1 to 13 for European countries.

3.

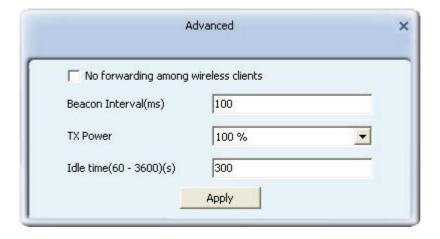


 Authentication: Open, Shared, WPA-PSK, WPA2-PSK, and WPA-PSK/WPA2-PSK

3.2.2.2 Advanced



Click Advanced button from menu bar, below window will pop out.



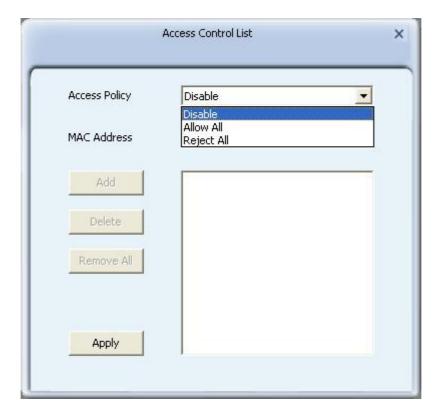
- Beacon Interval: Set the beacon interval of wireless radio. Do not modify default value if you don't know what it is, default value is 100.
- **TX Power:** You can set the output power of wireless radio. Unless you're using ZEW2547 in a really big space, you may not have to set output power to 100%. This will enhance security (malicious / unknown users in distance will not be able to reach your ZEW2547).

3.2.2.3 Access Control List

Access control includes **Allow All** and **Reject All**. After editing the MAC address access list, only the MAC in the Allow All list could access the Soft AP.



Click Access Control List button from menu bar, below window will pop out.

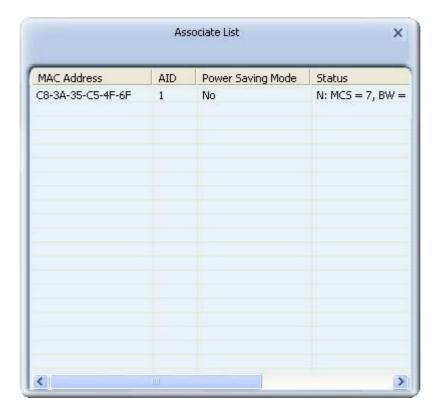


3.2.2.4 Associate List

Associate List page shows the information of the wireless devices accessed to this soft AP.



Click <a> Associate List button from menu bar, below window will pop out.



3.2.2.2 Switch to Working Station mode

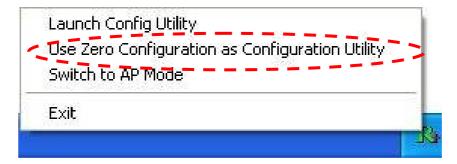
In AP mode, right-click the icon **i** in the system tray and choose **Switch to Station Mode**, then ZEW2547 is switching to working station mode with an interface of working station.



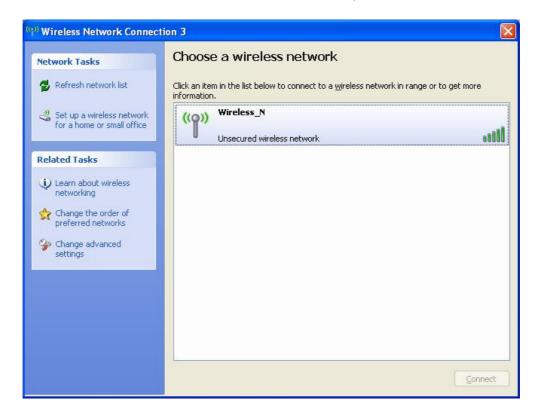
3.3 Use Zero Configuration

Windows XP and Vista has a built-in wireless network configuration utility "Windows Zero Configuration" (WZC). It is a built in service to configure your wireless clients from Windows

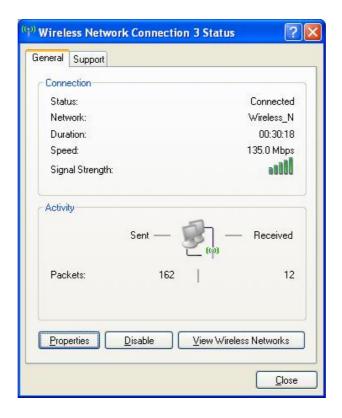
1. Start using WZC, right click the tray icon R and select **Use Zero**Configuration as Configuration utility.



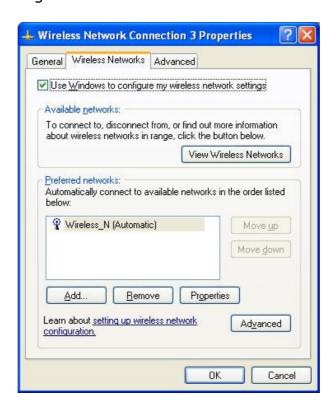
2. The windows wireless network connection will appear. Double click the wireless network icon on the system tray to check the wireless network, choose the network and click **Connect** to setup the association.

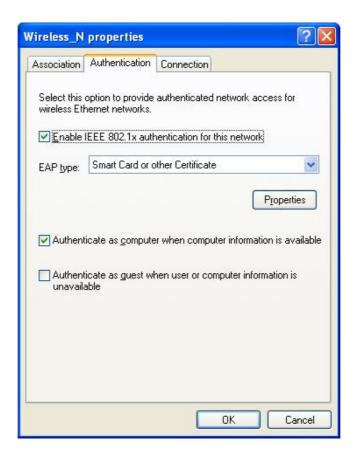


- 3. If your wireless router has been encrypted, there will be a window appeared for input the key. Please input the key and click **Connect**, then the connection connect.
- 4. To configure the wireless connect properties, please right click the wireless icon in the system tray and choose **Status** to open the page **Wireless Network Connection Status**.

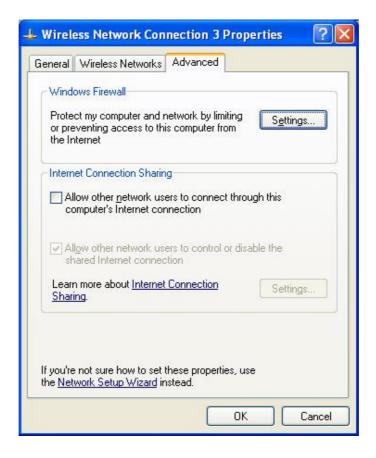


5. Click **Properties** button in **General** page and choose the tab **Wireless Networks** to add the **SSID** of available network by clicking **Add**, if there are several available networks, linking priority could be configured by the button **Move up** and **Move down**. The icon shows the current linked AP. Click **Properties** to configure authentication of wireless connection.





6. **Advanced** page configures firewall and connection sharing.



Chapter 4 How to connect with PSP



4.1 Configure PSP with Ad-Hoc mode

1. Select Network Settings on PSP



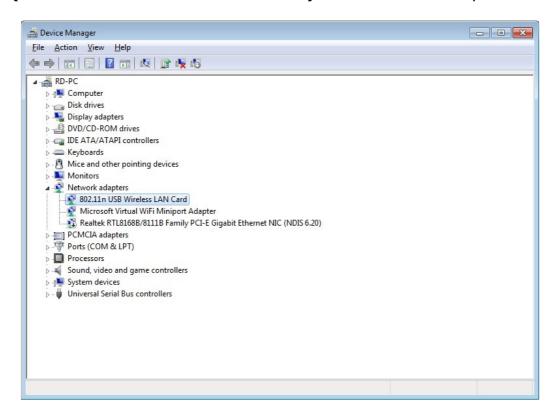
2. Select Ad-Hoc mode on PSP



3. Select Channel on PSP



Select Start → Control Panel → double-click System icon → select
 Hardware tab → click Device Manager button → select ZEW2547
 (802.11n USB Wireless LAN Card) list in Network adapters



5. Double-click **802.11n USB Wireless LAN Card** to configure properties

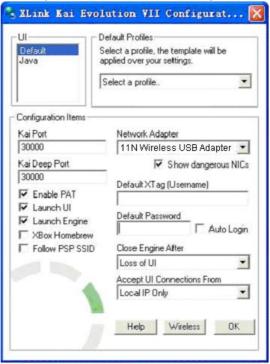
→ select **Advanced** tab → select **PSP XLink Mode** list in Property and choose **Enable** from Value drop-down menu.



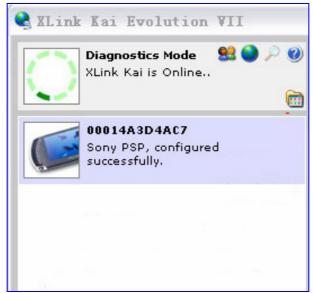
4.2 Configure XLink Kai

XLink Kai is a global gaming network - bringing together XBox, Playstation, Gamecube and PSP users, in one integrated community. It is software running on your PC or Macintosh that allows you to play system-link enabled games online for free.

Select **Start** \rightarrow **All programs** \rightarrow **XLink Kai Evolution VII** \rightarrow **Start Kai Config** to configure the user name, password and other parameters.



Login XLink Kai: Select **Start** → **All programs** → **XLink Kai Evolution VII** → **Start Kai**. PSP will connect with XLink Kai automatically. The following window will indicate the connection is established well now.



Chapter 5 Product Specifications

Chipset Ralink RT3370 Standards IEEE 802.11n, IEEE 802.11g, IEEE 802.11b Interface USB2.0 OS Windows 2000/ XP/ Vista/ 7; Macintosh; Linux User interface Easy to use user configuration software Transmit distance Indoor up to 100M, Outdoor up to 300M Antenna type Build-in PCB antenna Media Access Protocol WMM Data security WPA/WPA2; 64/128-bit WEP; TKIP/AES Frequency Range 2.4GHz~2.4835GHz Transmission Power 18dbm Sensitivity 11g -70dBm@10% PER 11b -87dBm@8% PER 11 Channels (USA, Canada) 13 Channels (Europe)
Interface OS Windows 2000/ XP/ Vista/ 7; Macintosh; Linux User interface Easy to use user configuration software Transmit distance Indoor up to 100M, Outdoor up to 300M Antenna type Build-in PCB antenna Media Access Protocol Data security WPA/WPA2; 64/128-bit WEP; TKIP/AES Frequency Range Transmission Power 18dbm 11n -68dBm@10% PER Sensitivity 11g -70dBm@10% PER 11b -87dBm@8% PER 11 Channels (USA, Canada)
User interface Easy to use user configuration software Transmit distance Indoor up to 100M, Outdoor up to 300M Antenna type Build-in PCB antenna Media Access Protocol WMM Data security WPA/WPA2; 64/128-bit WEP; TKIP/AES Frequency Range 2.4GHz~2.4835GHz Transmission Power 18dbm Transmission Power 18dbm Sensitivity 11g -68dBm@10% PER 11b -87dBm@10% PER 11 Channels (USA, Canada)
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Media Access Protocol Data security Frequency Range Transmission Power 11n -68dBm@10% PER Sensitivity 11g -70dBm@10% PER 11b -87dBm@8% PER 11 Channels (USA, Canada)
Data security WPA/WPA2; 64/128-bit WEP; TKIP/AES Frequency Range 2.4GHz~2.4835GHz Transmission Power 18dbm Sensitivity -68dBm@10% PER 11b -70dBm@10% PER 11b -87dBm@8% PER 11 Channels (USA, Canada)
Frequency Range 2.4GHz~2.4835GHz Transmission Power 18dbm Sensitivity -68dBm@10% PER 11g -70dBm@10% PER 11b -87dBm@8% PER 11 Channels (USA, Canada)
Transmission Power 18dbm Sensitivity -68dBm@10% PER 11g -70dBm@10% PER 11b -87dBm@8% PER 11 Channels (USA, Canada)
11n -68dBm@10% PER 11g -70dBm@10% PER 11b -87dBm@8% PER 11 Channels (USA, Canada)
Sensitivity 11g -70dBm@10% PER 11b -87dBm@8% PER 11 Channels (USA, Canada)
11b -87dBm@8% PER 11 Channels (USA, Canada)
11 Channels (USA, Canada)
Channels (Furance)
14 Channels (Japan)
Operating Temperature 0°C ~ 40°C
Storage Temperature -40°C~70°C
Operating Humidity 10%~ 90% RH Non-condensing
Storage Humidity 5% ~ 90% RH Non-condensing
11b 11 Mbps/5.5 Mbps/2 Mbps/1 Mbps
11g 54 Mbps/48 Mbps/36 Mbps /24 Mbps/18 Mbps/
12 Mbps/9 Mbps/6 Mbps
speed 150Mbps/135Mbps/120Mbps/90Mbps/60Mbp/
11n 45Mbps/30Mbps/15Mbps
72.2Mbps/65.0Mbp/57.8Mbps/43.3Mbps/28.9Mbps
20MHz /21.7Mbp/14.4Mbps/7.2Mbps

Chapter 6. TroubleShooting

This chapter provides solutions to problems that may occur during the installation and operation of ZEW2547. Read the descriptions below to solve your problems.

1. The ZEW2547 does not work properly.

Reinsert ZEW2547 into your PC's USB slot.

Right click on My Computer and select Properties. Select the device manager and click on the Network Adapter. You will find ZEW2547 if it is installed successfully. If you see the yellow exclamation mark, the resources are conflicting. You will see the status of ZEW2547. If there is a yellow question mark, please check the following:

Make sure that your PC has a free IRQ (Interrupt ReQuest, a hardware interrupt on a PC.)

Make sure that you have inserted the right adapter and installed the proper driver. If ZEW2547 does not function after attempting the above steps, remove it and do the following:

Uninstall the driver software from your PC.

Restart your PC and repeat the hardware and software installation as specified in this User Guide.

2. I cannot communicate with the other computers linked via Ethernet in the Infrastructure configuration.

Make sure that the PC to which ZEW2547 is associated is powered on. Make sure that ZEW2547 is configured on the same channel and with the same security options as with the other computers in the Infrastructure configuration.

3. What should I do when the computer with ZEW2547 installed is unable to connect to the wireless network and/or the Internet?

Check that the LED indicators for the broadband modem are indicating normal activity. If not, there may be a problem with the broadband connection. Check that the LED indicators on the wireless router are functioning properly. If not, check that the AC power and Ethernet cables are firmly connected. Check that the IP address, subnet mask, gateway, and DNS settings are correctly entered for the network.

In Infrastructure mode, make sure the same Service Set Identifier (SSID) is specified on the settings for the wireless clients and access points.

In Ad-Hoc mode, both wireless clients will need to have the same SSID. Please note that it might be necessary to set up one client to establish a BSS (Basic Service Set) and wait briefly before setting up other clients. This prevents several clients from trying to establish a BSS at the same time, which can result in multiple singular BSSs being established, rather than a single BSS with multiple clients associated to it.

Check that the Network Connection for the wireless client is configured properly. If Security is enabled, make sure that the correct encryption keys are entered on both ZEW2547 and the access point.

4. I can't find any wireless access point / wireless device in Network tab.

- Click *Rescan* for few more times and see if you can find any wireless access point or wireless device.
- Please move closer to any known wireless access point.
- *Ad-hoc* function must be enabled for the wireless device you wish to establish a direct wireless link.
- Please adjust the position of ZEW2547 and click Rescan button for few more times. If you can find the wireless access point or wireless device you want to connect by doing this, try to move closer to the place where the wireless access point or wireless device is located.

5. Nothing happens when I click Launch config utilities

- Please make sure ZEW2547 is inserted into your computer's USB port. If the Ralink configuration utility's icon is black, ZEW2547 is not detected by your computer.
- Reboot the computer and try again.
- Remove ZEW2547 and insert it into another USB port.
- Remove the driver and re-install.

6. I can not establish connection with a certain wireless access point

- Click Connect for few more times.
- If the SSID of access point you wish to connect is hidden (nothing displayed in *SSID* field in *Network* tab), you have to input correct SSID of the access point you wish to connect.
- You have to input correct passphrase / security key to connect an access point with encryption.
- The access point you wish to connect only allows network cards with specific MAC address to establish connection. Please go to *About* tab and write the value of *Phy_Addess* down, then present this value to the owner of access point to add the MAC address of your ZEW2547 to owner's access point's list.

7. The network is slow / having problem when transferring large files

- Move closer to the place where access point is located.
- Enable Wireless Protection in Advanced tab.
- Try a lower TX Rate in Advanced tab.
- Disable Tx Burst in Advanced tab.
- Enable WMM in WMM tab if you need to use multimedia / telephony related applications.
- Disable WMM Power Save Enable in WMM tab.
- There could be too much people using the same radio channel. Ask the owner of the access point to change the channel number.